Material Separation Plan
For the Diversion of Mercury
(MSP2, January 1 - June 30, 2004)
(MSP3, July 1 - December 31, 2004)

Annual Report

Wheelabrator North Andover Inc.

February 2005

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Materials Separation Plan
Annual Report on the Results of the Mercury Recovery Program

Introduction

This report presents annual results of two separate Materials Separation Plans that overlap during the reporting period, calendar year 2004. It includes activities for the Materials Separation Plan (MSP2) for the first six months of 2004 as well as activities for the new Materials Separation Plan (MSP3) for the period covering July 1, 2004 to December 31, 2004. The report describes the activities involved in the design, implementation and operation of the Mercury Recovery Program (MRP) in each community. Each MRP is community focused, locally based and operated. Wheelabrator provides all of the technical, logistical and financial support for each program. The corner stone of the MRP Program are the community collection sites. Each community has at least one, often two and in some cases three centrally located and easily accessible locations in the city or town where residents can safely dispose of products that contain mercury.

MRP for 2004 consisted of the following elements:

- Regional Outreach
- Local Outreach / Education
  - "Keep Mercury from Rising" Video distribution
  - School Outreach
  - Massachusetts Dentist Society Outreach Mailing
- Mercury Separation and Recycling
- Thermometer Exchange
- Thermostat Recovery
- Sphygmomanometer Exchange
- School Clean Sweeps
- Button-Cell Battery Collection
- Bulk Mercury Collection
- Fluorescent Lamp Reimbursement

Wheelabrator has continued to develop, expand and improve the MRP in each community participating in the program.

- The Regional Outreach placed informative educational advertisements in regional newspapers and radio stations.

- The Local Outreach placed six advertisements in local newspapers, promoting the local Mercury Recovery Program, informing residents where they could safely dispose of mercury products in their community. These advertisements are an important aspect of the overall educational and outreach effort.

- Informational flyers were distributed to the local school systems for distribution to elementary and middle school students.

- In cooperation with the Massachusetts Dental Society an informational flyer specifically designed for dentists was mailed to dentists in all twenty-five participating communities.

- The Mercury Recovery and Recycling was continued in each of the participating communities. Each community's collection site(s) is monitored on a regular basis. When the collection pails are full they are serviced promptly by the service provider. The program collects elemental mercury and a wide variety of mercury containing devices including: fever thermometers, lab thermometers, thermostats, mercury switches, sphygmomanometers, button-cell batteries, barometers and an assortment of miscellaneous mercury containing items.

- Training and education is conducted with personnel at each site on an ongoing and as needed basis.

- A special program for the collection of thermostats continues to develop in participating communities. Local Boards of Health are encouraged to pass a regulation banning the improper disposal of thermostats.

- School Clean Sweeps collection program continues to be offered to local school systems on an as needed basis.

- Button-cell batteries continued to be collected utilizing small collection boxes.

- The Fluorescent Lamp Reimbursement offered financial reimbursement for costs related to the disposal of mercury containing lamps such as fluorescent and HID bulbs.

The Mercury Recovery Program has been successful in removing thousands of mercury containing products from the municipal solid waste stream. The Program through its regional and local educational outreach efforts, has contributed to a greater awareness on the part of residents regarding the potential impacts of mercury on human health and the environment. Residents are increasingly aware of where in their community they can safely dispose of mercury and products containing mercury.

1. Regional Outreach

The Integrated Waste Services Association coordinated the regional education / outreach program for five Massachusetts' waste-to-energy facilities including facilities located in Saugus, North Andover, Millbury, Haverhill, and SEMASS.

Integrated Waste Services Association's activities in support of Massachusetts' Waste-to-Energy Facilities' Materials Separation Plan (MSP2 & 3) for 2004 are a continuation of the IWSA's 2003 Regional Education Program with a few modifications. This report describes the activities involved in the design, implementation and operation of IWSA's Program in support of the five waste-to-energy plants operating in Massachusetts and their Mercury Recovery Programs (MRP). Each facilities' MRP is community focused, locally based and operated; and the IWSA activities are designed to support in a coordinated fashion the MSPs on a regional basis.

IWSA Regional Program activities for 2004 consisted of the following elements:

- Evaluation & Analysis of 2003 Education Campaign "Keep Mercury From Rising"
- Print & Radio Advertising for "Keep Mercury From Rising"
- Revision & Update of Website www.keepmercuryfromrising.org
- Revision of Print materials in special formats for targeted events
- Dissemination of print and video materials developed in 2002 and 2003 to facilities, the public and media

a) Objectives

In 2004, the Regional Outreach Plan supported individual facility programs by the continued promotion of the media campaign, "Keep Mercury from Rising". This campaign included newspaper and radio advertisements. The campaign used targeted advertising educating the readers and listeners about the concerns related to mercury. The advertisements also encouraged residents to contact their local health departments to receive more information about mercury and find out where in their communities they could dispose of mercury containing devices.

The objectives for 2004 were met and included the following:

- The Regional Outreach Program continued to raise awareness about mercury-containing products in the home and the proper handling and disposal of these products;

- The Program provided information and promote local recycling events;

- The Program continued to build an integrated communications program that leveraged opportunities for incremental, free media, and worked synergistically with the efforts of individual waste-to-energy facilities.

b) Tactics

A public survey was completed in early 2004 measuring the effectiveness of the educational campaign "Keep Mercury From Rising." Findings from this survey were analyzed and used to evaluate and design the Regional Program. The Program continued targeted advertising to reach communities serviced by the facilities, as well as implementing marketing of print advertisements and radio live-read script to run as public service announcements. In addition to the print advertisements targeted at the general residential public, a print advertisement targeted at contractors and urging the collection and recycling of thermostats containing mercury switches was developed in 2003, and both continue to be used in targeted markets. The website, www.keepmercuryfromrising.org, was revised to make it more user-friendly, and now includes more contact information and contractor material, as well as continuing to provide information and assistance with recycling of mercury-containing products to the general public. IWSA produced five videos in 2003 for each waste-to-energy plant, and helped to promote those videos in 2004 by placing them on the website and developing a "B-roll" version of visuals and sound for use by the media covering MSP events. The videos show the unique and effective programs now in place to keep mercury containing products out of the waste stream.

i) Survey

The effectiveness of the regional education campaign is in large part measured by an annual research survey. The polling is designed to measure positive changes in public attitudes and behaviors, as well as the receptiveness of the message. The survey questionnaire was in the field May, 2004, and consisted of 500 completes, providing a 95% confidence level. The results showed that most people had not heard of the "Keep Mercury from Rising" slogan, and therefore media buys were increased slightly to determine if additional exposure might increase awareness. However, there was a dramatic increase in reported action taken by respondents if a mercury thermometer broke in the home. The survey also reported an increase in the amount of money a respondent would pay ($15.00 or less) to substitute a mercury product with a non-mercury containing product.

ii) Advertising

Radio and print advertising was run May 3-30, 2004. IWSA continued to use the "Keep Mercury from Rising" print advertisements featuring both the thermostat (contractor audience) and the thermometer (general public audience). Radio is a targeted medium that provided cost-efficient mass communication and built frequency of message delivery. Print advertising was equally effective. In addition to advertising in the Boston Globe, individual facilities used the "Keep Mercury From Rising" advertisements to announce local activities.

A three-week radio buy was implemented in May 2004. The buy was timed to encourage mercury recycling activities and added-value opportunities (e.g., sponsorship of special broadcasts, contests, and free spots stations provide). Radio stations airing the advertisements included WBZ-AM, WODS-FM, WMJX-FM.

In 2004, concentrated efforts were continued in the *Boston Globe,* particularly the North Zone and Northwest-A Zone editions. The Boston Globe was utilized for it's reach with its circulation of 237,524; it allowed coverage of both weeks of the campaign in both mediums, and it enabled utilization of a maximum page size (page dominant) versus community-type newspapers. Overall, the Boston Globe generated high impact with its larger page size and color availability (color not available in most community papers), while reaching a large audience within our target communities more than one time.

iii) Web-based Tool

The website, www.keepmercuryfromrising.org, was revised in the following manner to make it more user-friendly and provide additional information:

> The site needed site-wide navigation. Navigation now is under the masthead. Incorporated all the information currently on the site in the following categories:
>
> Home - text from http://keepmercuryfromrising.org/ without the links and phone information, plus the first two paragraphs from: http://keepmercuryfromrising.org/main.html
>
> Drop-off sites - links to http://keepmercuryfromrising.org/communities/

Spills - links to
http://keepmercuryfromrising.org/mercury_spills.html
Put the text on that page in a bulleted list, rather than a paragraph so it is easier for people to read. The link to the Mercury Spill PDF

FAQs -contains questions now found on
http://keepmercuryfromrising.org/main.html
Make this one page - standard FAQ format.

Video - video content now is on website from
http://keepmercuryfromrising.org/main.html

Contractors - contains info on:
http://keepmercuryfromrising.org/contractor.html

Links - content from http://keepmercuryfromrising.org/links.html

2. One site-wide masthead. :
http://keepmercuryfromrising.org/mercury_spills.html

3. Created an error page.

IV) Print Materials

IWSA continued to make available education brochures and print information developed in 200-2003, and assisted facilities in design of materials needed for a school bus fundraiser. The basic “Keep Mercury From Rising” message is consistent with media formats.

v) Video

The five-minute “Keep Mercury from Rising” educational video was completed for each facility in 2003. The video explains the need to recycle mercury-containing products and the efforts undertaken by the state of Massachusetts and waste-to energy facilities to reduce the amount of mercury entering the environment.

The video now is being used at the Wheelabrator North Andover facility for educational purposes during tours and other meetings. Copies of the video have been made available to local cable access television stations and a “B-roll” of visuals and sound is available for media covering MSP events. Copies

of the video also have been given to local public officials to be shown at meetings, schools, senior citizen centers, and other organizations that would benefit from viewing the video. As noted above, the video also may be viewed at the website.

VI) Public Service Announcements

The MSP 3, 2004-2006 plan, discussed IWSA's intent to market a Public Service Announcement to gain free media. Individual facilities did use the existing radio spots to develop targeted PSAs, but the regional PSA effort will be begun in latter half of MSP 3, during the calendar year 2005.

C) 2004 Estimates & Expenditures

Activity	Estimated Cost	Actual Expenditure
Survey	*$ 20,000*	*$ 20,000*
Media Buys	*$143,000*	*$ 175,000*
Website	*$ 5,000*	*$ 15,000*
Print	*$ 5,000*	*$ 1,000*
Video	*$ 2,000*	*$ 2,000*
PSA	*$ 25,000*	*$ 0*

Explanation

2. Local Outreach / Education

The local outreach / education effort consisted of several activities with a goal of increasing community awareness concerning mercury. The outreach / educational effort focused on three principles of proper management of mercury and products containing mercury. It identified the environmental and health impacts of mercury, identified products containing mercury and provided instructions on how residents can properly manage and dispose of mercury in their community. These activities consisted of newspaper advertisements, educational flyer mailings and distribution, local display of the educational board.

a) Newspaper Advertisements

The Mercury Recovery Program continued to be advertised in local newspapers. This local outreach activity has proven to be an effective method of educating residents about mercury and the need to properly dispose of products that contain mercury. The local program coordinators

consistently report that there is always an immediate increase in activity after an ad runs in their local newspaper.

The newspaper ads were specific to each community's program. They informed residents of the potential harmful effects of mercury to human health and the environment and instructed residents where they could safely dispose of mercury containing products in their community.

A total of one hundred and thirty-six 5" x 5" ads were placed in local newspapers promoting the program. There was a total of six ads for each community. The ads were placed in the months of: March, April, May, September, October, and November. Generally the ads would appear during the second week of the month. The vast majority of the newspapers are weekly newspapers usually published on Wednesday or Thursday of the week.

Four of the six ads were generic to the program, listing a variety of common products that contain mercury. All of these products could be properly disposed of at the local collection site (s). The ads also informed residents of the on-going thermometer exchange program and encouraged them to exchange their mercury fever thermometer for a new digital thermometer. The remaining two ads were specific to thermostats, encouraging contractors and residents to properly dispose of these products at the local collection site. These ads were placed in the newspapers in October and April.

b) "Keep Mercury from Rising" Video distribution

The local cable access television station in each community received a copy of the "Keep Mercury from Rising" video. Each director of the Board of Health or other community contact assisted in permitting the scheduling of the film on local cable. In addition, the Director of Health in each community received a copy of the film for distribution to local groups or schools etc.

Due to the short nature of the film it was primarily aired as filler either before or after the airing of a locally filmed event or meeting. In the town of Acton a longer version was filmed by the local cable company with the local Director of Health. The expanded film ran for one hour. The "Keep Mercury from Rising" video was used as a lead into the longer program with an interview format. This format gave the health director and the MRP coordinator an opportunity to discuss Acton's specific program in more detail. This also assured that the program would be scheduled on a regular basis for showing. The full film was shown several times on their local access.

c) Educational Display Board

The educational display boards that were distributed to each community in 2002 are still being effectively utilized in the local community outreach campaign. Several of the boards are permanently displayed at the city or town hall. In many communities the boards are periodically displayed and rotated among the local libraries, senior citizen centers, health fairs and town meetings. These boards compliment the other local outreach efforts reinforcing the importance of properly disposing of mercury containing devices.

d) School Outreach Flyer

Twenty-two community school systems received educational flyers for distribution to elementary and middle school students (Attachment 2). The flyers were separated and sent to each school in the community as back-pack stuffers to be taken home with the students. The flyers identified the program as locally based, highlighted several mercury containing products and informed residents where they could properly dispose of these products. They also encouraged parents to exchange their mercury thermometers for new digital thermometers. The flyers were not offered to the communities of Carlisle, Lowell and Watertown because these community either do not have a permanent collection program or do not exchange thermometers.

e) Massachusetts Dental Society mailing.

In cooperation with the Massachusetts Dental Society (MDS) an educational flyer specific to dentists was designed and printed (Attachment 3). The flyer was included in a mailing that was sent to every dentist in the communities participating in the program. The flyers were sent by MDS to their member dentists in their association's envelope. The mailing took place in November and a follow up mailing is planned for the spring.

3. Mercury Separation and Recycling, Local Community Collection Programs

The community based collection sites continue to be the cornerstone of the overall Mercury Recovery Program. Each community has at least one, some have two centrally located, easily accessible collection site(s). These sites are typically located at the Board of Health office, Department of Public Works and or the Transfer Station.

There is a minimum of two five-gallon pails for the collection of mercury containing items at each of these sites. The second pail is the backup and is to

be used only after the first pail becomes full. The individual(s) at each site responsible for the daily management of the program have been trained in the proper handling and management of mercury containing products. They have also been trained in the proper clean-up procedures in the case of a spill. Each location has a mercury spill kit and a box of zip-lock plastic bags. Written instructions are on the spill kit itself as well as on each five-gallon pail. Due to the fact that there are frequent changes in personnel, training is reviewed with the staff on an as-needed basis during visits to the collection sites. In most cases some form of training and education takes place on each visit.

Veridium is the service provider for the MRP. Attached to each five-gallon pail are two stickers. One sticker contains the program instructions with information about what to do in case of a mercury spill. The other larger sticker identifies the program, lists a few of the representative mercury containing products and gives instructions about what to do when the pail is full. The local program coordinators are instructed to secure the lid and call the 800 telephone number for a pickup. Contractually Veridium will pick up the pail within two to four weeks of being notified. In actual practice the pickup takes place within one or two weeks from the time they receive the pickup request.

In the event that a large quantity of elemental mercury is found in a residents home, special arrangements can be made for a pick up to occur at that location.

A notice was mailed to the water department in each community (Attachment 4). The notice consisted of a flyer informing the water department of the existence of the Mercury Recovery Program in their community. The flyer was also personally distributed to each local coordinator in each community. The flyer identified “Flow Meters, Elemental Mercury and Switches” as the most likely items to potentially be found in their departments. The water departments were encouraged to properly dispose of these items at the town’s designated drop-off location. The back of the flyer listed each drop-off location by town and department with the address and telephone number. We received several small quantities of mercury at the drop-off locations.

4. Thermometer Exchange

The permanent Thermometer Exchange Program continues to be a very popular component of the overall MRP. Though the peak collection numbers from the first two years of the program has dropped off, there continues to be a steady flow of residents coming into the collection sites to exchange their mercury fever thermometer for a new digital thermometer. Each community has an ample supply of digital thermometers for distribution. The communities appreciate this aspect of the program as a positive outreach effort to their residents. Many of the local program coordinators utilize the residents visit to their office as an opportunity to further educate them about mercury and other aspects of the program. The Thermometer Exchange collected 2,093 4-inch fever thermometers

and lab thermometers in 2004. This is 4,777 less than was collected in 2003. This decrease is expected to continue over the next few years as more of the mercury fever thermometers are removed from the residents houses.

5. Thermostat Recovery

The Thermostat Recovery Activity continued to be a major focus of the MRP in 2004. This year saw the expansion of the number of Boards of Health that passed the Thermostat Regulation. As of the end of the year fourteen communities have passed a regulation banning the improper disposal of thermostats. There are four communities where the regulation is pending and a number of others have indicated an interest in passing a regulation. Now that there is documented success in removing hundreds of thermostats from the waste stream more communities will be receptive to passing a regulation in the future.

The regulations banning the improper disposal of thermostats are very clear. They state the purpose of the regulation, definitions, penalties and effective date. The penalties associated with the regulations range from $50.00 per incident (per thermostat) up to a $300.00 fine per incident. The penalty associated with the regulation is an essential component. Without the threat of a potential financial penalty, contractors would be less inclined to properly dispose of the thermostats.

The purpose of encouraging local Boards of Health to pass a regulation banning the disposal of thermostats was an attempt to motivate contractors to properly dispose of these devices. According the Thermostat Recycling Corporation, an industry sponsored organization, eighty percent of thermostats are handled by professional contractors. Prior to initiating the effort to encourage communities to pass the regulations, very few thermostats were being collected. Now with the passage of regulations and the other activities associated with this effort such as supportive literature, direct mailings and local newspaper advertisements contractors are beginning to properly dispose of thermostats.

Two direct mailings were sent to plumbers, electricians, boiler technicians and building contractors in the communities that have passed a regulation. The mailings were sent in the spring and the fall. Each mailing contained a notice signed by both the city or town's Building Director and Health Director. It also contained an informational flyer along with an educational piece developed by the MADEP, "Mercury and Health" and "Mercury and the Environment". In addition, two advertisements specific to thermostats (Attachment 5) were placed in the local newspapers, one in the spring and one in the fall.

Each community that passes the regulation also receives posters, similar to the flyer that was included in the mailing for display in the building department and the health department. Also, small stickers are given to each building department to be attached to permits as an additional reminder that the local building department is serious about keeping these devises from entering the waste stream.

In 2004, 533 thermostats and 187 small switches were collected by the program. Small switches primarily come from thermostats so the equivalent of 720 thermostats were collected.

6. Sphygmomanometer Exchange (Blood Pressure Monitor)

A pilot activity to collect mercury sphygmomanometers was attempted in the communities of Wilmington and Arlington. The programs were coordinated with the Board of Health office and the local Senior Citizen Center.

Since the beginning of the MRP over 100 mercury sphygmomanometers have been collected. According to the local program coordinator in the community most of these devices were brought in by senior citizens. In an attempt to remove these devices, a Sphygmomanometer Exchange was planned for each community. Local advertisements were run in the local newspapers and specially designed posters (Attachment 6) were displayed. In Arlington and Wilmington an article was written for the local senior citizen newsletter.

This particular effort was not very successful. Although a number of residents brought in sphygmomanometers most of them did not contain mercury. In both communities the local newspaper failed to run the ad on the specified date prior to the event. In Arlington's case the placement service failed to submit the ad in time. In Wilmington's case the newspaper just failed to run the ad. So in both cases the outreach consisted of posters put up around town and the article in the senior citizen newsletter.

7. School Clean Sweeps

The School Clean Sweeps Program in 2004 continued to be offered to school systems for elemental mercury and products containing mercury. The program provided a free service to school systems to inspect chemical storage areas and science laboratories and for the safe removal of elemental mercury and products or devices containing mercury. In addition to the removal service the program also provided replacement products for certain items targeted for removal. The replacement products consisted of lab thermometers, digital barometers and portable and wall mounted sphygmomanometers.

In 2004, a follow-up School Clean Sweeps was conducted in two school systems. Dracut High School had 28 lab thermometers and fourteen pounds of

elemental mercury. Lexington High School had 21 fever thermometers, 211 lab thermometers, 30 switches and one sphygmomanometer.

8. Button Cell Battery Collection

The Button Cell Battery Collection is an on-going effort in each community. Each community has received a supply of small collection boxes for button-cell batteries. They are encouraged to distribute the boxes to targeted businesses and certain community locations for the collection of button-cell batteries. Key locations in any community consist of points of purchase such as drug stores, jewelry stores, hearing aide stores and camera stores. Also community locations such senior citizen centers, health offices and libraries are fairly good locations for the collection of button-cell batteries. With limited resources it is difficult for many communities to distribute and collect the collection boxes. Very often the only collection point is the Board of Health office.

Arlington initiated a button-cell battery contest at their library. Residents were asked to guess how many button-batteries were contained in a fish bowl at the library. This was part of a mercury education display at the library sponsored by the Health Department and Department of Public Works. The educational effort was very successful with a few hundred people participating in the contest.

9. Bulk Mercury Collection

Each community has been informed that a special collection program is available for elemental mercury. If a large quantity of elemental mercury or devices containing a quantity of mercury is identified in the community, a special pickup of the mercury (or devices) is available. All of the program coordinators have been notified of this special collection service in the event of such a discovery.

There was on large pickup of mercury in Bedford. A chemistry teacher from a high school in New Hampshire had seventy pounds of elementary mercury in a gas can in a shed on his property. After inspecting the container the MRP coordinator notified Veridium, advised them of the condition of the container and requested an immediate pick-up.

10. Fluorescent Lamp Reimbursement

The Fluorescent Lamp Reimbursement activity completed its second full year of implementation. A total of eight communities submitted invoices for reimbursement. A number of communities have expressed an interest in beginning a fluorescent bulb collection in their city or town. In many communities this is difficult due to the logistics necessary to coordinate among different town departments such as the health department, town administration, public works, schools etc.

The overall results of the existing program have been successful. A total of 51,121 linear feet of florescent bulbs and 1,922 single bulbs such as circular, u-tubes and HID have been collected. This is an increase of over 11,000 linear feet from the previous year.

Program Results

All but one of the Wheelabrator North Andover communities participated in the Mercury Recovery Program in 2004. The town of Watertown discontinued their program a year ago because their recycling center was being renovated. The new location does not have a indoor office where a permanent collection program could be operated. The City of Lowell does not have a permanent drop off location in the City but they do conduct two HHW programs each year and collect mercury items and exchange thermometers at that time. The MRP coordinator is working closely with Lowell's recycling coordinator in expanding the fluorescent bulb reimbursement effort.

The combined educational / outreach effort including the regional outreach and local outreach has been very effective in educating residents about mercury and the potential harm to human health and the environment. The regional radio and newspapers spots, local newspaper ads, "Keep Mercury from Rising" video, mailings, flyer distribution, local promotions have all helped raise the awareness about mercury and the need to properly dispose of products that contain mercury.

The total net amount of mercury collected through the Mercury Recovery Program weighed 221.43 pounds. This is a decrease of only about 13 pounds from the total net amount collected through the community based program in 2003. There was also a bulk collection of 70 pounds of elemental mercury from the town of Bedford which accounts for how close the totals of the two years.

The number of thermometers collected decreased from the previous year. There were 2093 fever thermometers collected in 2004. In 2003 there were 7585 thermometers collected, 5492 fewer thermometers were collected in 2004. The recovery of thermometers has leveled off resulting in a lower yet steady flow of residents exchanging thermometers.

A total of 720 thermostats and small switches were collected in 2004, a decrease of 142 over the previous year. The number of communities that have passed the health regulation has increased to fourteen with four pending passage. The outreach effort through mailings, stickers, posters, advertisements has helped inform contractors and residents about the importance of removing these devices from the waste stream.

The collection of fluorescent bulbs has continued to increase with over 51,000 linear feet of fluorescent lamps and over 1,900 additional mercury containing lamps being collected. There are a number of communities interested in starting a fluorescent bulb collection program.

In conclusion, the overall Mercury Recovery Program is working well in twenty-four communities. The regional and local outreach efforts have been very effective in educating residents about mercury and its potential harm to human health and the environment. The local collection sites are well established in each community. Although the total net amount of elemental mercury and thermostats declined in 2004, this was anticipated and is evidence of successful prior outreach. Both the collection of button cell batteries and fluorescent bulbs increased. It is unknown as to why the number of thermostats declined in 2004. All three of these items should continue to see an increase in collection in future years.